

Mass of the lowest $T = 2$ state of ^{32}S and the Isobaric Multiplet Mass Equation

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We present results from a recent experiment to determine the excitation energy of the lowest $T = 2$, $J^\pi = 0^+$ state in ^{32}S ($E_x \approx 12$ MeV) with high precision and accuracy. The state was populated using the $^{31}\text{P}(p, \gamma)$ resonance and the energies of the de-excitation γ rays were determined ($E_{\gamma_1} \approx 4$ MeV and $E_{\gamma_2} \approx 8$ MeV). The mass of this state provides us with a stringent test of the Isobaric Multiplet Mass Equation (IMME) for the $A = 32$ quintet. Implications of this measurement to the IMME and the $e^+ - \nu$ correlation from the superallowed beta decay of ^{32}Ar shall be briefly discussed.